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ABSTRACT

While data on the onset of cigarette smoking among younger adolescents has been investigated extensively, it is less clear whether the same social factors influence older adolescents. To examine these social factors, as well as the influence of personality and beliefs, 1,977 high school participants in an anti-smoking study completed a questionnaire relating to smoking behavior, family and peer smoking behavior, and attitudes and beliefs. Saliva specimens were also examined. Of these subjects, 1,705 remained non-smokers at the 4 month posttest, while 277 (14 percent) began smoking. Results suggested that even during late adolescence, peer influence remains the predominant predictor of smoking. As with younger children, rebelliousness and family smoking also figured predominantly in smoking onset. Perceptions of social morality significantly distinguished smokers from non-smokers. While the findings were significant, it appeared easier to predict who would not become a smoker than who would become one, in part due to the transitory nature of experimental smoking. (JAC)

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CIGARETTE SMOKING ONSET AMONG HIGH SCHOOL STUDENTS

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CIGARETTE SMOKING ONSET AMONG HIGH SCHOOL STUDENTS

The onset of cigarette smoking, especially among younger adolescents has been investigated extensively. Primary among the factors which influence the onset early experimentation with tobacco is the influence of friends. High correlations between smoking status and friends' smoking have been observed in cross-sectional and longitudinal studies (e.g. Chassin, Presson, Bensenberg, Corty, Olshavksy and Sherman, 1981; Levitt and Edwards, 1970; Newman, 1970). Presumably, as young children enter adolescence, their needs to be accepted by peers results in increased tendencies to conform to peer expectations and behaviors (Costanzo and Shaw, 1966). Nonetheless, one might expect the role of peers and conformity to be of decreasing importance as the middle adolescent years are reached (Mussen, Conger and Kagan, 1974).

Also important in the development of early experimenation with smoking is the role of parents (Baer and Katkin, 1971; Bewley, Bland and Harris, 1974; Chassin et al, 1981). Significant correlations have been observed for older adolescents and their parents as well (Huba, Wingard and Bentler, 1979). While family influences predominate in young children's decisions, they are expected to wane as they enter late adolescence when they become relatively more independent (Flay, d'Avernas, Best, Kersell and Ryan, 1982; Jessor and Jessor, 1977).

Among young smokers, rebelliousness has been shown to be a major personality correlate of early cigarette smoking (Hansen, Fielding and Malotte, 1982). In general one expects young people who are striving for independence, who are risk takers, and who have general problem behavior tendencies to be more willing to try smoking.

Additional correlates previously documented have included attitudes and beliefs about smoking as well as normative expectations about the prevalence of smoking and its acceptability among peers (Fishbein and Ajzen, 1975; Chassin, et al, 1981). Generally, those who believe smoking to not be harmful and to be socially acceptable and relatively widespread are most likely to begin smoking as young people. Included in this must also be expectations about the personal rewards attendant upon cigarette smoking with those who are willing to try cigarettes likely to expect appetitive stimulation and mood enhancement while denying addictive properties of cigarette smoking.

While data on young adolescents tend to confirm these hypotheses, among older adolescents little propective has been reported. A major problem with many studies is the failure to analyze data via multivariate methods. Since many items are likely to be correlated (e.g. rebelliousness, attitudes and beliefs), multivariate techniques may add clarity when interpreting results.

In the current study, we hypothesize older subjects who start smoking to be influenced by similar social factors as their younger counterparts. Unlike studies on younger subjects, the role of personality and beliefs will be of relatively greater importance.

METHOD

Subject: Subjects were selected from among participants in a high school anti-smoking study. From among subjects identified as non smokers, 2,326 had pretest and posttest data of these 349 had at least one missing variable and were thus not considered for analysis. Of the remaining 1,977 subjects, most remained non-smokers at a four month posttest (n= 1705) while relatively few (n = 277; 14%) began smoking.

Procedure: All subjects were pretested in January, 1981 and posttested in

May, 1981. Subjects completed a 109 item questionnaire containing items about smoking behavior, and family and peer smoking behavior. Attitude-belief items consisted of a series of statements to which subjects agreed or disagreed. Measures were based on a five point scale (strongly agree, mildly agree, no opinion, mildly disagree, or strongly disagree). Statements covered five broad topic areas including: 1) health beliefs about smoking and beliefs about the addictive nature of smoking, 2) beliefs about the social and physical reinforcements associated with cigarette smoking, 3) rebelliousness, 4) beliefs about normative tobacco use, and 5) moral attitudes towards cigarette smoking. Scales created for analysis from these items were based on a previously reported factor analysis of attitude-belief items (Hanson, Johnson, Collins, Graham and Sobol, 1982.

To enhance self-reports of current cigarette smoking status, saliva specimens were collected concurrently with administration of the questionnaire (Evans, Hansen & Mittelmark, 1977; Luepker, Pechacek, Murray, Johnson, Hurd & Jacobs, 1981).

RESULTS

Our plan for data analysis was to conduct a discrimination analysis in order to ascertain the degree to which subjects who began smoking between pretest and posttest could be distinguished from those who remained non-smokers. Prior to submitting the seven scales to the discriminant analysis, all but one siginificance univariate F's can be seen in Table 1.

Insert table about here

Results of the dicriminant analysis resulted in the inclussion of four scales: smoking among friends, rebelliousness, family smoking, and moral attitudes toward cigarette smoking. The resulting function was highly significant ($F = 25.47$; $df = 4,1972$; $p < .00001$). The relative weights of the canonical discriminant function coefficients suggest that peer smoking was the most discriminating variable (.5916), followed by rebelliousness (-.4191), moral attitude toward smoking (.2981) and family smoking (.2829). As might be expected, those who began smoking had many friends who smoked, came from smoking families, were relatively rebellious and had few concerns about the social morality of smoking cigarettes.

This function accounted for only 5% of the variance (canonical $r = .22$) between smokers and non-smokers. In the classification analysis, 64.9% on subjects who remained non-smokers were correctly identified, 56.0% of those who began smoking were correctly identified.

DISCUSSION

Results of this study suggest that even during late adolescence, peer influence predominates as the mechanism for becoming a cigarette smoker. As with younger children, rebelliousness and family smoking also figured prominently in smoking onset. "Previous studies have not examined young people's perceptions of social morality regarding smoking as a predictor of smoking onset. In the current study, this dimension significantly distinguished smokers from non-smokers."

While the findings of this project were significant, the overall predictive value of the resulting function was not as great as one might hope. It appears that it is easier to predict who will not become a smoker than who will become one. Part of the difficulty

associated with this may have to do with the transitory nature of experimental cigarette smoking. Since we were attempting to predict smoking status four months after pretest, those who experimented briefly but quit by four months time and those who experimented after the posttest would not be identified. Hence, the ultimate predictive value of the four predictor variables may be slightly underestimated. To test such a notion, more frequent posttest measurees are required.

These results suggest that a program similar to previously conducted smoking prevention programs may also be beneficial to preventing the late onset of experimental smoking. That is, programs to which peer pressure resistance skills are taught and anti-smoking norms reinforced may be effective at detering the late onset of experimental smoking.

TABLE 1

ALL UNIVARIATE F'S OF PRETEST VARIABLES PREDICTING POSTTEST SMOKING STATUS

VARIABLE	F'S	SIGNIFICANCE
HEALTH AND ADDICTION BELIEFS	23.51	.00001
SOCIAL AND PHYSIOLOGICAL BELIEFS	26.42	.00001
REBELLIOUSNESS	34.77	.00001
NORMATIVE BELIEFS	2.81	.1
SOCIAL MORALITY OF SMOKING BELIEFS	42.33	.00001
FAMILY SMOKING	16.40	.00001
PEER SMOKING	57.97	.00001

* DF = 1,1975

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